CLAIMS

What is claimed is:

1. A method of performing asynchronous transfer mode (ATM) segmentation functions comprising the operations of:

receiving data to send;

segmenting the data to generate a plurality of ATM cells;

buffering the plurality of ATM cells in a memory device;

traffic shaping the buffered plurality of ATM cells; and

transmitting the plurality of ATM cells on a network.

2. The method of claim 1 wherein the traffic shaping further comprises:

examining a virtual channel and determining whether a cell should be output at a given time; and

updating virtual channel information when a cell is to be output at the given time.

3. The method of claim 1 wherein the operation of segmenting data is performed by a central processing unit (CPU) of a computer.

4. The method of claim 1 wherein the traffic shaping of data is performed by a central processing unit (CPU) of a computer.

5. A program storage device readable by a machine, tangibly embodying a program of instructions executable by a machine to perform method steps for segmenting asynchronous transfer mode (ATM) data, the program comprises:

a first code section to instruct a CPU of a computer to segment data to generate a plurality of ATM cells;

a second code section to buffer the plurality of ATM cells in a memory device; and

a third code section to traffic shape the buffered plurality of ATM cells.

6. The program storage device of claim 5 wherein the first code section includes instructions to examine a virtual channel and determine whether a cell should be output at a given time and to update virtual channel information when a cell is to be output at the given time.

7. The program storage device of claim 5 wherein the program further comprises:

a fourth code section to compute a new partial cyclic redundancy check used to protect against bit errors.

8. The program storage device of claim 5 wherein the program includes instructions to pad ATM cells which are not complete.

9. A method of performing asynchronous transfer mode (ATM) reassembly functions comprising:

receiving in an uninterrupted stream a plurality of protocol data units without interrupt in an input buffer, each protocol data unit including a plurality of ATM cells; and

retrieving ATM cells from the input buffer until all data corresponding to a payload data unit is retrieved and checking a CRC to determine whether data was received without error.

10. The method of claim 9 further comprising:

dropping the payload data unit when the CRC indicates an error.

11. The method of claim 9 further comprising:

copying a cell payload from the input buffer into a reassembly buffer.

12. The method of claim 11 further comprising:

calculating a new partial CRC corresponding to the cell payload.

13. The method of claim 11 further comprising:

determining whether the cell payload includes an end of payload data unit marker; and

copying a second cell payload from the input buffer into the reassembly buffer when retrieved cell payload does not include the end of payload data unit marker.

SUB #4

14. A program storage device readable by a machine tangibly embodying a program of instructions executable by a machine to perform method steps for reassembly ATM data, the program comprising:

a first code section to receive a stream including a plurality of protocol data units without interrupt in an input buffer, each protocol data unit including a plurality of ATM cells.

15. The program storage device of claim 14 further comprising:

a second code section to retrieve ATM cells from the input buffer until all data corresponding to a payload data unit is retrieved and checking a CRC to determine whether data was received without error.

SUB #5

16. The program storage device of claim 14 further comprises:

a second section to copy a cell payload from the input buffer into a reassembly buffer.